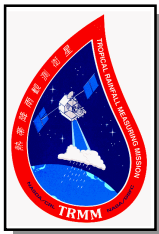


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# TRMM Monthly Status Briefing

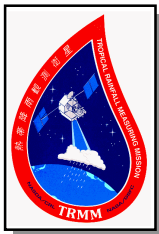
December 8, 1999



# FOT Overview

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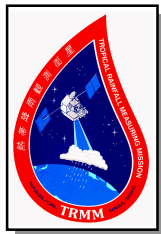
- Key Issues or Upcoming Events to be discussed
  - Subsystem Overview
    - » Solar Array jitter status
  - Leonid Meteor Storm Summary
  - Ground System Overview
    - » New release 8.1



# FOT Overview

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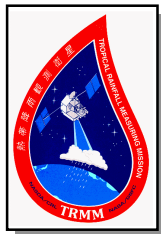
- Operations Status - Engineering Staff
  - Flight Ops Summary - Lou Kurzmilller
  - Leonid Activity Summary - Andy Calloway
  - Training & Certification Status - Ave Kludze
  - Thermal & Electrical - Ave Kludze
  - RCS - Andy Calloway
  - ACS, Deployables, C&DH - Joe Kowalski
  - RF & Power - Candace Shoemaker
  - CERES & LIS - Candace Shoemaker
  - VIRS - Ave Kludze
  - TMI & PR - Joe Kowalski
  - Ground System - Lou Kurzmilller



# Flight Operations Summary

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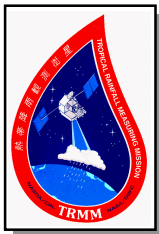
- Supported 532 SN events in November
  - 1 Yaw Maneuver & 9 Delta-V Maneuvers
- 4 Event Rpts, 1 Generic Late Acq & no Anomaly Rpts generated
  - » ER #140 through ER #143
  - » 2 refer to in-house concerns (H/W); 2 to external WSGT concerns (No ODM data & Ground System fault)
- Significant Milestones
  - » Uplinked Solar Array Jitter patch
  - » Powered off/on instruments for Leonid Meteor Storm
  - » Final '99 Ground System s/w Release 8.1 delivered
  - » Submitted Y2K plan for BCP timeline



# Flight Operations Summary

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- Staffing
  - » Personnel matters remain stable
  - » Attempting to acquire one additional console analyst
  - » Mgr's office to be relocated due to renovation



# Leonid '99 Activities

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- No anomalous behavior detected on any subsystem or instrument
- FDF Exposure Time website utilized; MSFC ZHR e-mails received
- Contingency and Instrument Procs all tested with simulator
- FDC Tables 106 & 107 & TSM Table 20 dumped and verified
- Instrument OFF / ON times listed below:

TMI OFF: 99-321 @ 19:57:28z

TMI ON: 99-322 @ 06:44:47z

PR OFF: 99-321 @ 19:58:45z

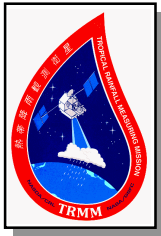
PR ON: 99-322 @ 08:18:14z

LIS OFF: 99-321 @ 21:25:27z

LIS ON: 99-322 @ 06:53:28z

VIRS OFF: 99-321 @ 21:28:07z

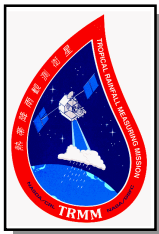
VIRS ON: 99-322 @ 06:50:47z



# Training

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- New hires working towards certification
  - All four are expected to complete Console Certification requirements in the next six weeks
    - » All four have completed on-line tests for Console Certification

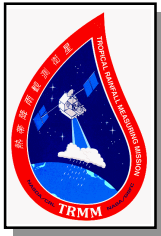


# Thermal Subsystem

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- Thermal subsystem is nominal
- The monthly thermal data for November has been provided to Code 540 for analysis
- No new Anomaly Reports or outstanding issues

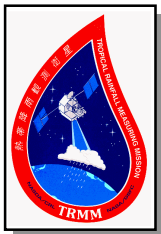




# Electrical Subsystem

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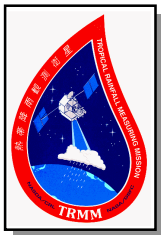
- Electrical subsystem is nominal
- No new Anomaly Reports or outstanding issues



# RCS Subsystem

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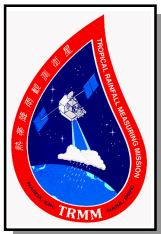
- RCS performed nominally through Delta-V maneuvers #134 - #142
- Maneuvers are now every 3 days through Solar Maximum with occasional 4 day increments
- Fuel remaining is 659.978 kg of hydrazine (74.1% of total), with sufficient nitrogen gas pressurant to last through 2002 based on latest predictions
- Dec. 29th Delta-V will be greater than 60 sec to boost observatory above nominal science box to allow maximum drift between burns
  - FDF will report orbit and altitude parameters and duration outside of box



# ACS Subsystem

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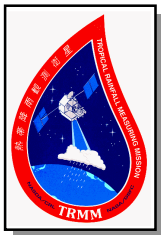
- Wrote tables 21 (TS Limits), 53 (FDC Statistics), 76 (SA Parameters), and 84 (Ephemeris Model Coefficients) to EEPROM prior to Leonids on 99-313
- Solar array jitter patch loaded to RAM on 99-319
  - Investigation continues
  - Commanded velocity more controlled (see plot)
- Open Issues
  - Solar array oscillations (CCR #052)
    - » Next high beta angle ( $-57^{\circ}$ ) on 00-009
      - If successful s/w patch will be written to EEPROM
  - Possible ESA calibration required to reduce large Yaw updates
  - Expanded max. burn duration for Y2K
    - » Modified table #73 from 1 to 3 minutes
    - » Will be uplinked early that week



# Deployables Subsystem

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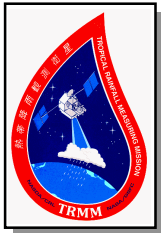
- Solar array drive continues to operate with no signs of slippage
- Deployables AETD looking into the possibility of loading solar array stops to track past 90° to check the glitch buffer
  - Risk Analysis to be conducted first



# C&DH Subsystem

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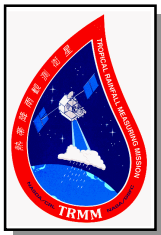
- UTCF adjusted on 99-309, 318, and 327: FS adjusted on 327
  - Current UTCF value is 31535996.854485 sec.
  - Current FS value is x'77D'
- Invalid Stream ID due to TMI on 99-325, and VIRS on 99-328
- Flywheel on 99-307, 308, and 329
- EDACs (5)
- Used modified DS filter table on 99-328/329 for 8 Hz jitter gyro data
- Open Issues
  - Elimination of launch TSMs



# RF Subsystem

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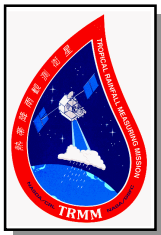
- Center frequencies still steady, with XP2 drifting towards uplink
- One generic late acquisition on 99-305



# Power Subsystem

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- Open Issues
  - FSW (CCR #050) patch to PSIB timer routines (AR #73)
    - » Test Results Review to be held in January
- Closed Anomalies - awaiting official approval
  - #77 PSIB Normal Packet Time-out
    - » FSW completed write-up
- Open Anomalies
  - #55 Battery 2 Cell 1 Hitting YH and RH limits
  - #73 PSIB A Orbit Status Timer Unchanged

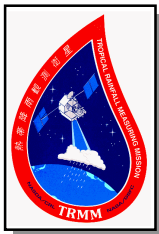


# CERES Instrument

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- Next turn on period will be determined by TERRA checkout in Y2K
  - Will most likely not power OFF again due to converter voltage reading saturation
- Open issues
  - Meeting to discuss removal from ACS contingency load-shed
    - » Plan and test result walk-through scheduled Dec. 15th
  - Awaiting official closure of Anomaly Report #69
    - » CERES DAA High Voltage on +15 V converter
  - Awaiting new TSMs for CERES current monitoring (CCR #045)
    - » Testing begun

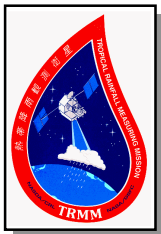




# LIS Instrument

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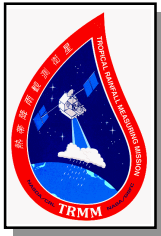
- Routine MSFC real-time command request performed on 99-307
- Open Issues
  - Awaiting MSFC report on the LIS Automatic Heater Controller Anomaly (AR #78)
    - » LIS Automatic Heater Controller remains disabled



# VIRS Instrument

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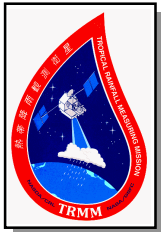
- VIRS is nominal with no new Anomalies
- Outgassing of the instrument is in progress to optimize the inner stage cooler to its ideal operating temperature (107°K) following the Leonid activities
  - The thermal short has had no impact on science data collection
- The FDF solution to the planning aid problem seems to have worked
  - Solution: Calibrations should only be performed at certain beta angles



# TMI Instrument

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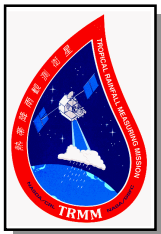
- No open issues or concerns



# PR Instrument

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- 3 External Calibrations have been performed on 99-328, 99-329, & 99-330 under direction of NASDA



# Ground System

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- String 2 will remain prime mission planning for year rollover
  - New release installed on string 3 (November 22) with ability to switch to old software
- Hardware maintenance reswapped CPUs on string 3 on 99-341
- Two MAC PCs and printer received from XTE as upgrades
- Event Reports
  - 140: ODMs not received during event
  - 141: One packet not fully decommutated following COHO switch
  - 142: TR1WS1 crashed on 99-320
  - 143: Open short at WSGT
    - » Re-dumped data on next event